

## Experimental Constraints on fourth generation quark masses

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The existing bounds from CDF on the masses of the fourth generation quarks,  $t'$  and  $b'$ , are reexamined. The bound of 256 GeV on the  $t'$  mass assumes that the primary decay of the  $t'$  is into  $q+W$ , which is not the case for a substantial region of parameter space. The bound of 268 GeV on the  $b'$  mass assumes that the branching ratio for  $b' \rightarrow b+Z$  is very large, which is not only not true for much of parameter space, but is never true for  $b'$  masses above 255 GeV. In addition, it is assumed that the heavy quarks decay within the silicon vertex detector, and for small mixing angles this will not be the case. The experimental bounds, including all of these effects, are found as a function of the other heavy quark mass and the mixing angle.

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